Index to Volume 12

Journal of the Aeronautical Sciences

Numbers 1–4, January–October, 1945

No. 1, January, 1945, pages 1–126
No. 2, April, 1945, pages 127–252
No. 3, July, 1945, pages 253–378
No. 4, October, 1945, pages 379–504

Material that has appeared in the above volume has been indexed under a general subject heading and by author and has been further cross-indexed under various subheadings.

Aerodynamics—

Aerodynamic Performance of Small Spheres from Subsonic to High Supersonic Velocities, A. C. Charters and R. N. Thomas 468

Airfoil Theory for Flows of Variable Velocity, Rufus Isaacs 113

Analytic Investigation of Problems Concerning the Flow of Cooling Air in Light Airplane Engine Installations, John R. Weske 63

The Attenuation Method for Compressible Flow Systems, Leonard Michael Greene 329

Calculated Gust Loads for Tailless Airplanes, Raymond F. Anderson 118

Coefficient Method for Solving the Flutter Frequency Equation, M. V. Barton 164

Compressible Flows in Aeronautics (Eighth Wright Brothers Lecture), John Stack 127

Effect of Temperature Lapse Rate on Recovery from Compressibility Dives, C. E. Pappas and M. G. Harrison .. 379

The Effective Use of Aerodynamic Balance on Control Surfaces, L. E. Root 149

Elementary Considerations of Longitudinal Stability, Marion Thomas Hockman 370

Equivalent Circuits of Compressible and Incompressible Fluid Flow Fields, Gabriel Kron 221

A General Stability Index for Flow Near Plane Boundaries, Hunter Rouse 429

The Glauert-Prandtl Approximation for Subsonic Flows of a Compressible Fluid, Hsue-Shen Tsien and Lester Lees 173

The Influence of Structural Deformation on Airplane Characteristics, Alexander H. Flax 94

Investigation of the Wing-Wake Frequency with Application of the Strouhal Number, M. Zbigniew Krzywoblocki ... 51

Letters to the Editor

Bailey, Neil P. 220
Beskin, Leon 476
Emmons, Howard W. 476
Laitone, Edmund V. 220
Lu, Hoshen 432

Numerical and Network-Analyzer Tests of an Equivalent Circuit for Compressible Fluid Flow, G. K. Carter and G. Kron 232

A Review of the Aerodynamics of Flight Load Factors in Relation to the Safety Regulations, Hugh B. Freeman .. 320

Shock Waves in Aerodynamics, Howard W. Emmons 188

The Simplification of Flutter Calculations by Use of an Extended Form of the Routh-Hurwitz Discriminant, S. Sherman, J. DiPaola, and H. F. Frissel 385

The Thermodynamics of the Laminar Boundary Layer of a Heated Body in a High-Speed Gas Flow Field, Arthur N. Tifford 241

Vibrations of Composite Structures, H. Serbin 108

Wing Flaps in Light Aircraft Design, Maurice A. Garbell 14

Aircraft, high-speed, performance methods for 345
Airfoil theory for flows of variable velocity 113
Airplane structures, the applicability of Saint-Venant's principle to 455
Airplanes, tailless, calculated gust loads for 118
Altimeter systems, lag determination of 85
Aluminum-alloy compressive test results for material properties using reduced moduli, correction of 305
Aluminum-alloy sheets, curved, in compression for monocoque constructions 357

ANDERSON, RAYMOND F. Calculated Gust Loads for Tailless Airplanes 118

ANSEL, G., F. A. RAPPLEYEA, AND R. E. PERRY. Influence of Prestressing and Cyclic Stressing on Stress-Strain Characteristics of Magnesium Alloys 448

BAILEY, NEIL P. Letter to the Editor (Aerodynamics) ... 220

BARBA, JOSEPH F. Letter to the Editor (Stress Analysis and Structures) 123

BARTON, M. V. Coefficient Method for Solving the Flutter Frequency Equation 164

Beams, four-element box, shear lag and torsion bending of 461
Beams, hollow, with longitudinal webs subjected to torsional loads, a simplified analysis of 103
Beams, the stress-area method of designing 298
Beams of variable section, stress analysis of nondevelopable semimonocoque structures considered as 203
Bearing strength in airplane design 67

BENCKERT, WILLIS J. Letter to the Editor (Stress Analysis and Structures) 431

Bending, plastic—approximate solution 408
Bending beyond the proportional limit, a note on 21
Bending, plastic—further considerations 253
Bending with buckled stringers, note on analysis for 403

BESKIN, LEON. Letter to the Editor (Aerodynamics) 476

——— Letters to the Editor (Stress Analysis and Structures) 122, 355, 407, 432

——— Stress Analysis of Nondevelopable Semimonocoque Structures Considered as Beams of Variable Section 203

BEST, GILBERT C. The Stress-Area Method of Designing Beams 298

BONNEY, E. ARTHUR, AND HAROLD B. CROCKETT. Reverse-Pitch Propellers as Airplane Landing Brakes 441

Boundary layer, laminar, of a heated body in a high-speed gas flow field, the thermodynamics of the..... 241
Brakes, airplane landing, reverse-pitch propellers as..... 441
Buckling, elastic, on the dynamics of..... 433
Buckling of sandwich-type panels..... 285
Buckling of stiffener and elastic sheet combinations under pure bending..... 393
BURGHARDT, JOSEPH E., AND JOHN D. PIERSON. A Specific Chart for Flying Boat Take-Off Performance..... 169
BUZZETTI, C. J., AND W. L. HOWLAND. Measurement of Maneuvering Loads in Flight..... 195

CARTER, G. K., AND G. KRON. Numerical and Network-Analyzer Tests of an Equivalent Circuit for Compressible Fluid Flow..... 232
CASTLES, WALTER, JR. A Direct Method of Estimating the Performance of a Helicopter in Powered Flight..... 477
CHARTERS, A. C., AND R. N. THOMAS. Aerodynamic Performance of Small Spheres from Subsonic to High Supersonic Velocities..... 468
Columns, magnesium-alloy, strength of..... 339
Compressible flow systems, the attenuation method for... 329
Compressible fluid, the Glauert-Prandtl approximation for subsonic flows of a..... 173
Compressible fluid flow, numerical and network-analyzer tests of an equivalent circuit for..... 232
Compressible and incompressible fluid flow fields, equivalent circuits of..... 221
Compressibility dives, effect of temperature lapse rate on recovery from..... 379
CONTINI, ROBERTO. A Graphic Solution for Strains and Stresses from Strain Rosette Data..... 47
Control surfaces, the effective use of aerodynamic balance on..... 149
CROCKETT, HAROLD B., AND E. ARTHUR BONNEY. Reverse-Pitch Propellers as Airplane Landing Brakes..... 441

Design—
Bearing Strength in Airplane Design, Albert Epstein.... 67
Determination of the Axis of Rotation of a Skewed Axis Landing Gear, J. J. Jerger..... 217
Graphical Analysis of Performance of Hydraulic Shock Absorbers in Aircraft Landing Gears, Alexander J. Yorgiadis 421
Measurement of Maneuvering Loads in Flight, C. J. Buzzetti and W. L. Howland..... 195
Motogliders—A Natural Link Between Gliders and Light Planes, Wieslaw Z. Stepniewski..... 39
A Specific Chart for Flying Boat Take-Off Performance, John D. Pierson and Joseph E. Burghardt..... 169
Wing Flaps in Light Aircraft Design, Maurice A. Garbell 14
DIPAOLA, J., S. SHERMAN, AND H. F. FRISSEL. The Simplification of Flutter Calculations by Use of an Extended Form of the Routh-Hurwitz Discriminant..... 385

EASTMAN, E. J., J. C. MCDONALD, AND A. A. MOORE. The Relation of Stress to Strain in Magnesium Base Alloys.. 273
EMMONS, HOWARD W. Letter to the Editor (Aerodynamics) 476
———— Shock Waves in Aerodynamics..... 188
Engines—
Analytic Investigation of Problems Concerning the Flow of Cooling Air in Light Airplane Engine Installations, John R. Weske..... 63
Design and Application of High-Pressure Coefficient Axial-Flow Fans, J. G. Sawyer..... 281
A Vibration Theory Combining the Dynamic Stiffness and Mobility Methods, Hugh B. Stewart..... 349
EPSTEIN, ALBERT. Bearing Strength in Airplane Design.. 67
Extrusions under compressive loads, instability of..... 485

Fans, high-pressure coefficient axial-flow, design and application of..... 281
Flaps, wing, in light aircraft design..... 14
FLAX, ALEXANDER H. The Influence of Structural Deformation on Airplane Characteristics..... 94
Flow near plane boundaries, a general stability index for.. 429
Flows, compressible, in aeronautics (Eighth Wright Brothers Lecture)..... 127
Flutter calculations by use of an extended form of the Routh-Hurwitz discriminant, the simplification of..... 385
Flutter frequency equation, coefficient method for solving the..... 164
Flying boat take-off performance, a specific chart for..... 169
FREEMAN, HUGH B. A Review of the Aerodynamics of Flight Load Factors in Relation to the Safety Regulations 320
FRISSEL, H. F., S. SHERMAN, AND J. DIPAOLA. The Simplification of Flutter Calculations by Use of an Extended Form of the Routh-Hurwitz Discriminant..... 385

GARBELL, MAURICE A. Wing Flaps in Light Aircraft Design..... 14
Gliders and light planes, a natural link between—Motogliders..... 39
GORAN, LENARD A., AND JACOB KAROL. Letter to the Editor (Stress Analysis and Structures)..... 251
GREENE, LEONARD MICHAEL. The Attenuation Method for Compressible Flow Systems..... 329

HARRISON, M. G., AND C. E. PAPPAS. Effect of Temperature Lapse Rate on Recovery from Compressibility Dives 379
HAYES, WALLACE D. Performance Methods for High-Speed Aircraft..... 345
HEAD, RICHARD M. Effect of Pressure Variations on Speed Runs..... 311
———— Lag Determination of Altimeter Systems. 85
Helicopter in powered flight, a direct method of estimating the performance of a..... 477
HOCKMAN, MARION THOMAS. Elementary Considerations of Longitudinal Stability..... 370
HOFF, N. J. The Applicability of Saint-Venant's Principle to Airplane Structures..... 455
———— AND S. E. MAUTNER. The Buckling of Sandwich-Type Panels..... 285
HOWLAND, W. L., AND C. J. BUZZETTI. Measurement of Maneuvering Loads in Flight..... 195

Instruments—
Lag Determination of Altimeter Systems, Richard M. Head 85
Operational Methods in Servomechanism Design, William E. Restemeyer..... 313
ISAACS, RUFUS. Airfoil Theory for Flows of Variable Velocity..... 113

JERGER, J. J. Determination of the Axis of Rotation of a Skewed Axis Landing Gear..... 217

KAROL, JACOB. Correction of Aluminum-Alloy Compressive Test Results for Material Properties Using Reduced Moduli..... 305
———— AND LENARD A. GORAN. Letter to the Editor (Stress Analysis and Structures)..... 251
KIEHLE, M. H., AND A. VANTINE. A Consideration of Calculated Versus Flight Test Take-Off Performance..... 263
KOSKO, ERYK. Letter to the Editor (Stress Analysis and Structures)..... 407

KOSKO, ERYK. A Simplified Analysis of Hollow Beams with Longitudinal Webs Subjected to Torsional Loads.. 103
KRON, GABRIEL. Equivalent Circuits of Compressible and Incompressible Fluid Flow Fields..... 221
———— AND G. K. CARTER. Numerical and Network-Analyzer Tests of an Equivalent Circuit for Compressible Fluid Flow..... 232
KRZYWOBLOCKI, M. ZBIGNIEW. Investigation of the Wing-Wake Frequency with Application of the Strouhal Number..... 51

LAITONE, EDMUND V. Letter to the Editor (Aerodynamics) 220
Landing gear, skewed axis, determination of the axis of rotation of a..... 217
Landing gears, aircraft, graphical analysis of performance of hydraulic shock absorbers in..... 421
LEES, LESTER, AND HSUE-SHEN TSIEN. The Glauert-Prandtl Approximation for Subsonic Flows of a Compressible Fluid..... 173
LEVY, SAMUEL, AND WALTER RAMBERG. Instability of Extrusions Under Compressive Loads..... 485
Light airplane engine installations, analytic investigation of problems concerning the flow of cooling air in..... 63
Load factors, flight, in relation to the safety regulations, a review of the aerodynamics of..... 320
Loads, maneuvering, in flight, measurement of..... 195
Longitudinal stability, elementary considerations of..... 370
LU, HOSHEN. Letter to the Editor (Aerodynamics)..... 432

MACK, CHARLES E., JR. Three-Dimensional Analysis of Engine Mount Rings by a Strain Energy Method..... 1
MACLEAN, EDWARD A. Note on Analysis for Bending with Buckled Stringers..... 403
Magnesium alloys, influence of prestressing and cyclic stressing on stress-strain characteristics of..... 448
Magnesium base alloys, the relation of stress to strain in.. 273
MARTELL, G. M., AND R. T. SCHWARTZ. Mechanical Properties of Magnesium-Alloy Tubing..... 31
Materials—
Correction of Aluminum-Alloy Compressive Test Results for Material Properties Using Reduced Moduli, Jacob Karol..... 305
Curved Aluminum-Alloy Sheets in Compression for Monocoque Constructions, Georges Welter..... 357
Influence of Prestressing and Cyclic Stressing on Stress-Strain Characteristics of Magnesium Alloys, F. A. Rappleyea, R. E. Perry, and G. Ansel..... 448
Mechanical Properties of Magnesium-Alloy Tubing, R. T. Schwartz, and G. M. Martell..... 31
The Relation of Stress to Strain in Magnesium Base Alloys, E. J. Eastman, J. C. McDonald, and A. A. Moore.... 273
Strength of Magnesium-Alloy Columns, F. A. Rappleyea. 339
MAUTNER, S. E., AND N. J. HOFF. The Buckling of Sandwich-Type Panels..... 285
MCDONALD, J. C., E. J. EASTMAN, AND A. A. MOORE. The Relation of Stress to Strain in Magnesium Base Alloys.. 273
MEIER, J. H. On the Dynamics of Elastic Buckling..... 433
MOORE, A. A., E. J. EASTMAN, AND J. C. MCDONALD. The Relation of Stress to Strain in Magnesium Base Alloys.. 273

NEWTON, R. E. Shear Lag and Torsion Bending of Four-Element Box Beams..... 461
NILES, ALFRED S. Letter to the Editor (Stress Analysis and Structures)..... 240

OSGOOD, WM. R. Plastic Bending—Approximate Solution 408
———— Plastic Bending—Further Considerations 253

Panels, sandwich-type, the buckling of..... 285
PAPPAS, C. E., AND M. G. HARRISON. Effect of Temperature Lapse Rate on Recovery from Compressibility Dives 379
Performance—
A Consideration of Calculated Versus Flight Test Take-off Performance, M. H. Kiehle and A. Vantine..... 263
A Direct Method of Estimating the Performance of a Helicopter in Powered Flight, Walter Castles, Jr..... 477
Effect of Pressure Variations on Speed Runs, Richard M. Head..... 311
Performance Methods for High-Speed Aircraft, Wallace D. Hayes..... 345
A Specific Chart for Flying Boat Take-Off Performance, John D. Pierson and Joseph E. Burghardt..... 169
PERRY, R. E., F. A. RAPPLEYEA, AND G. ANSEL. Influence of Prestressing and Cyclic Stressing on Stress-Strain Characteristics of Magnesium Alloys..... 448
PIERSON, JOHN D., AND JOSEPH E. BURGHARDT. A Specific Chart for Flying Boat Take-Off Performance..... 169
Plates with intermediate rigid supports, buckling of..... 375
POLIVKA, J. J. Letter to the Editor (Stress Analysis and Structures)..... 107
Pressure variations on speed runs, effect of..... 311
Propellers—
Reverse-Pitch Propellers as Airplane Landing Brakes, Harold B. Crockett and E. Arthur Bonney..... 441

RAMBERG, WALTER, AND SAMUEL LEVY. Instability of Extrusions Under Compressive Loads..... 485
RAPPLEYEA, F. A. Strength of Magnesium-Alloy Columns. 339
————, R. E. PERRY, AND G. ANSEL. Influence of Prestressing and Cyclic Stressing on Stress-Strain Characteristics of Magnesium Alloys..... 448
REISSNER, ERIC. Buckling of Plates with Intermediate Rigid Supports..... 375
RESTEMEYER, WILLIAM E. Operational Methods in Servomechanism Design..... 313
Ring loaded normal to its plane, stresses in a..... 235
Rings, engine mount, three-dimensional analysis of, by a strain energy method..... 1
ROOT, L. E. The Effective Use of Aerodynamic Balance on Control Surfaces..... 149
Rotating Wing Aircraft—
A Direct Method of Estimating the Performance of a Helicopter in Powered Flight, Walter Castles, Jr..... 477
ROUSE, HUNTER. A General Stability Index for Flow Near Plane Boundaries..... 429

SAIBEL, EDWARD. Letter to the Editor (Stress Analysis and Structures)..... 251
SAWYER, J. G. Design and Application of High-Pressure Coefficient Axial-Flow Fans..... 281
SCHWARTZ, R. T., AND G. M. MARTELL. Mechanical Properties of Magnesium-Alloy Tubing..... 31
SERBIN, H. Vibrations of Composite Structures..... 108
Servomechanism design, operational methods in..... 313
SHERMAN, S., J. DIPAOLA, AND H. F. FRISSEL. The Simplification of Flutter Calculations by Use of an Extended Form of the Routh-Hurwitz Discriminant..... 385
Shock waves in aerodynamics..... 188
STACK, JOHN. Compressible Flows in Aeronautics (Eighth Wright Brothers Lecture)..... 127
STEPNIEWSKI, WIESLAW Z. Motogliders—A Natural Link Between Gliders and Light Planes..... 39
STEWART, HUGH B. A Vibration Theory Combining the Dynamic Stiffness and Mobility Methods..... 349

Strain rosette data, a graphic solution for strains and stresses from 47
Stress Analysis and Structures—
The Applicability of Saint-Venant's Principle to Airplane Structures, N. J. Hoff 455
Buckling of Plates with Intermediate Rigid Supports, Eric Reissner 375
The Buckling of Sandwich-Type Panels, N. J. Hoff and S. E. Mautner 285
Buckling of Stiffener and Elastic Sheet Combinations Under Pure Bending, E. E. Weibel 393
A Graphic Solution for Strains and Stresses from Strain Rosette Data, Roberto Contini 47
Instability of Extrusions Under Compressive Loads, Walter Ramberg and Samuel Levy 485
Letters to the Editor
Barba, Joseph F. 123
Benckert, Willis J. 431
Beskin, Leon 122, 355, 407, 432
Goran, Lenard A., and Jacob Karol 251
Karol, Jacob, and Lenard A. Goran 251
Kosko, Eryk 407
Niles, Alfred S. 240
Polivka, J. J. 107
Saibel, Edward 251
Wang, Chi-Teh 432
Note on Analysis for Bending with Buckled Stringers, Edward A. MacLean 403
A Note on Bending Beyond the Proportional Limit, M. Yachter 21
On the Dynamics of Elastic Buckling, J. H. Meier 433
Plastic Bending—Approximate Solution, Wm. R. Osgood. 408
Plastic Bending—Further Considerations, Wm. R. Osgood. 253
Shear Lag and Torsion Bending of Four-Element Box Beams, R. E. Newton 461
A Simplified Analysis of Hollow Beams with Longitudinal Webs Subjected to Torsional Loads, Eryk Kosko 103
Stress Analysis of Nondevelopable Semimonocoque Structures Considered as Beams of Variable Section, Leon Beskin 203
The Stress-Area Method of Designing Beams, Gilbert C. Best 298
Stresses in a Ring Loaded Normal to Its Plane, E. R. Walters 235
Three-Dimensional Analysis of Engine Mount Rings by a Strain Energy Method, Charles E. Mack, Jr. 1
Structural deformation on airplane characteristics, the influence of 94

THOMAS, R. N., AND A. C. CHARTERS. Aerodynamic Performance of Small Spheres from Subsonic to High Supersonic Velocities 468
TIFFORD, ARTHUR N. The Thermodynamics of the Laminar Boundary Layer of a Heated Body in a High-Speed Gas Flow Field 241
TSIEN, HSUE-SHEN, AND LESTER LEES. The Glauert-Prandtl Approximation for Subsonic Flows of a Compressible Fluid 173
Tubing, magnesium-alloy, mechanical properties of 31

VANTINE, A., AND M. H. KIEHLE. A Consideration of Calculated Versus Flight Test Take-Off Performance 263
Vibrations of composite structures 108
Vibration theory combining the dynamic stiffness and mobility methods 349

WALTERS, E. R. Stresses in a Ring Loaded Normal to Its Plane 235
WANG, CHI-TEH. Letter to the Editor (Stress Analysis and Structures) 432
WEIBEL, E. E. Buckling of Stiffener and Elastic Sheet Combinations Under Pure Bending 393
WELTER, GEORGES. Curved Aluminum-Alloy Sheets in Compression for Monocoque Constructions 357
WESKE, JOHN R. Analytic Investigation of Problems Concerning the Flow of Cooling Air in Light Airplane Engine Installations 63
Wing-wake frequency with application of the Strouhal Number, investigation of the 51

YACHTER, M. A Note on Bending Beyond the Proportional Limit 21
YORGIADIS, ALEXANDER J. Graphical Analysis of Performance of Hydraulic Shock Absorbers in Aircraft Landing Gears 42

by a
... 1
flu-
... 94
Per-
per-
... 468
mi-
eed
... 241
rt-
m-
... 173
... 31
al-
... 263
... 108
o-
... 349
ts
... 235
ad
... 432
et
... 393
n
... 357
i-
e
... 63
l
... 51
... 21
g
... 42